Week 1 Assignment Sanjana PJP Batch9

a.
1. Setup a Local Repository

```
MINGW64:/e/PGP PS 2021/Week 1/Local                              —    □    ✕

Sanjana Bansal@Rahuls-Desktop MINGW64 /
$ cd "E:\PGP PS 2021\Week 1"

Sanjana Bansal@Rahuls-Desktop MINGW64 /e/PGP PS 2021/Week 1
$ mkdir "Local"

Sanjana Bansal@Rahuls-Desktop MINGW64 /e/PGP PS 2021/Week 1
$ cd Local

Sanjana Bansal@Rahuls-Desktop MINGW64 /e/PGP PS 2021/Week 1/Local
$ git init
Initialized empty Git repository in E:/PGP PS 2021/Week 1/Local/.git/

Sanjana Bansal@Rahuls-Desktop MINGW64 /e/PGP PS 2021/Week 1/Local (master)
$ ls -a
./  ../  .git/

Sanjana Bansal@Rahuls-Desktop MINGW64 /e/PGP PS 2021/Week 1/Local (master)
$
```

2. Setup a Remote Repository

```
MINGW64:/e/PGP PS 2021/Week 1/Remote                            —    □    ✕

Sanjana Bansal@Rahuls-Desktop MINGW64 /e/PGP PS 2021/Week 1/Local (master)
$ cd ..

Sanjana Bansal@Rahuls-Desktop MINGW64 /e/PGP PS 2021/Week 1
$ git clone "https://github.com/Sanjana089/Remote.git"
Cloning into 'Remote'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), 625 bytes | 4.00 KiB/s, done.

Sanjana Bansal@Rahuls-Desktop MINGW64 /e/PGP PS 2021/Week 1
$ dir
Local   Remote

Sanjana Bansal@Rahuls-Desktop MINGW64 /e/PGP PS 2021/Week 1
$ cd Remote

Sanjana Bansal@Rahuls-Desktop MINGW64 /e/PGP PS 2021/Week 1/Remote (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean

Sanjana Bansal@Rahuls-Desktop MINGW64 /e/PGP PS 2021/Week 1/Remote (main)
$
```

3. Create Local Branches (Feature Branch, , Dev. Branch, QA Branch, Master / Prod. Branch, Delivery Branch).

```
MINGW64:/e/PGP PS 2021/Week 1/Local                                    —    □    ×

Sanjana Bansal@Rahuls-Desktop MINGW64 /e/PGP PS 2021/Week 1
$ cd Local

Sanjana Bansal@Rahuls-Desktop MINGW64 /e/PGP PS 2021/Week 1/Local (master)
$ touch main.txt

Sanjana Bansal@Rahuls-Desktop MINGW64 /e/PGP PS 2021/Week 1/Local (master)
$ git add main.txt

Sanjana Bansal@Rahuls-Desktop MINGW64 /e/PGP PS 2021/Week 1/Local (master)
$ git commit -m 'In the main branch'
[master (root-commit) 873b8e5] In the main branch
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 main.txt

Sanjana Bansal@Rahuls-Desktop MINGW64 /e/PGP PS 2021/Week 1/Local (master)
$ git branch Feature

Sanjana Bansal@Rahuls-Desktop MINGW64 /e/PGP PS 2021/Week 1/Local (master)
$ git branch Dev

Sanjana Bansal@Rahuls-Desktop MINGW64 /e/PGP PS 2021/Week 1/Local (master)
$ git branch QA

Sanjana Bansal@Rahuls-Desktop MINGW64 /e/PGP PS 2021/Week 1/Local (master)
$ git branch Delivery

Sanjana Bansal@Rahuls-Desktop MINGW64 /e/PGP PS 2021/Week 1/Local (master)
$ git branch
  Delivery
  Dev
  Feature
  QA
* master

Sanjana Bansal@Rahuls-Desktop MINGW64 /e/PGP PS 2021/Week 1/Local (master)
$
```

4. Create Remote Branches

```
sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021
$ cd Remote

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (main)
$ git branch
* main

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (main)
$ git checkout -b Dev
Switched to a new branch 'Dev'

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Dev)
$ git push origin Dev
Warning: Permanently added the RSA host key for IP address '13.234.176.102' to t
he list of known hosts.
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: Create a pull request for 'Dev' on GitHub by visiting:
remote:      https://github.com/Sanjana089/Remote/pull/new/Dev
remote:
To github.com:Sanjana089/Remote.git
 * [new branch]      Dev -> Dev
```

```
sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Delivery)
$ git branch -a
* Delivery
  Dev
  Feature
  QA
  main
  remotes/origin/Delivery
  remotes/origin/Dev
  remotes/origin/Feature
  remotes/origin/HEAD -> origin/main
  remotes/origin/QA
  remotes/origin/main

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Delivery)
```

5. Add files, make changes to existing files, add folders, remove folders, remove files.

```
MINGW64:/e/PJP PS 2021/Remote                                           —    □    ×

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Delivery)
$ git checkout Feature
Switched to branch 'Feature'

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ touch file1.txt

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ git add file1.txt

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ nano file1.txt

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ cat file1.txt
Making changes to existing file.

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ git add file1.txt
warning: LF will be replaced by CRLF in file1.txt.
The file will have its original line endings in your working directory

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ mkdir Folder1

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ cd Folder1

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote/Folder1 (Feature)
$ touch file2.txt file3.txt

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote/Folder1 (Feature)
$ cd ..

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ mkdir Folder2

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ cd Folder2

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote/Folder2 (Feature)
$ touch file4.txt

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote/Folder2 (Feature)
$ cd ..

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ git add Folder1 Folder2
```

```
sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ ls
Folder1/  Folder2/  README.md  file1.txt

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ rmdir -f Folder1
rmdir: unknown option -- f
Try 'rmdir --help' for more information.

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ rm -f Folder1
rm: cannot remove 'Folder1': Is a directory

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ rm -rf Folder1

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ ls
Folder2/  README.md  file1.txt

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ cd Folder2; rm file4.txt

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote/Folder2 (Feature)
$ ls

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote/Folder2 (Feature)
$ |
```

6. Check-in, stage, commit, push files into feature branch

```
MINGW64:/e/PJP PS 2021/Remote                                    —    □    ✕

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ git add Folder2

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ git status
On branch Feature
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        new file:   Folder1/file2.txt
        new file:   Folder1/file3.txt
        new file:   Folder2/file5.txt
        new file:   file1.txt

Changes not staged for commit:
  (use "git add/rm <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        deleted:    Folder1/file2.txt
        deleted:    Folder1/file3.txt


sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ git commit -m "changes in feature branch"
[Feature b249cbb] changes in feature branch
 4 files changed, 1 insertion(+)
 create mode 100644 Folder1/file2.txt
 create mode 100644 Folder1/file3.txt
 create mode 100644 Folder2/file5.txt
 create mode 100644 file1.txt

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ git status
On branch Feature
Changes not staged for commit:
  (use "git add/rm <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        deleted:    Folder1/file2.txt
        deleted:    Folder1/file3.txt

no changes added to commit (use "git add" and/or "git commit -a")

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ git rm Folder1
fatal: not removing 'Folder1' recursively without -r

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ git rm -r Folder1
rm 'Folder1/file2.txt'
rm 'Folder1/file3.txt'
```

```
sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ git status
On branch Feature
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        deleted:    Folder1/file2.txt
        deleted:    Folder1/file3.txt
```

```
sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ git commit -m "changes in feature branch"
[Feature a72caa9] changes in feature branch
 2 files changed, 0 insertions(+), 0 deletions(-)
 delete mode 100644 Folder1/file2.txt
 delete mode 100644 Folder1/file3.txt

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ git status
On branch Feature
nothing to commit, working tree clean

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ git push origin Feature
Enumerating objects: 9, done.
Counting objects: 100% (9/9), done.
Delta compression using up to 4 threads
Compressing objects: 100% (5/5), done.
Writing objects: 100% (8/8), 670 bytes | 167.00 KiB/s, done.
Total 8 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), done.
To github.com:Sanjana089/Remote.git
   b15f8c3..a72caa9  Feature -> Feature

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$
```

Check-in

```
sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (main)
$ git merge Feature
Updating b15f8c3..a72caa9
Fast-forward
 Folder2/file5.txt | 0
 file1.txt         | 1 +
 2 files changed, 1 insertion(+)
 create mode 100644 Folder2/file5.txt
 create mode 100644 file1.txt

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (main)
$ git status
On branch main
Your branch is ahead of 'origin/main' by 2 commits.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (main)
$ git push origin
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0
To github.com:Sanjana089/Remote.git
   b15f8c3..a72caa9  main -> main

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (main)
$
```

7. Promote code from Feature branch to Dev. branch via pull request

Comparing changes

Choose two branches to see what's changed or to start a new pull request. If you need to, you can also compare across forks.

| base: Dev ▾ | ← | compare: Feature ▾ | ✓ Able to merge. These branches can be automatically merged. |

Discuss and review the changes in this comparison with others. Learn about pull requests   **Create pull request**

| ⟲ 2 commits | 📄 2 files changed | 💬 0 comments | 👥 1 contributor |

Commits on Mar 16, 2021

○ 🧑 changes in feature branch   b249cbb

○ 🧑 changes in feature branch   a72caa9

📄 Showing **2 changed files** with **1 addition** and **0 deletions.**   Unified | Split

∨ 0 ▬▬▬ Folder2/file5.txt 📋   •••
Empty file.

∨ 1 ▬▬ file1.txt 📋   •••
... ... @@ -0,0 +1 @@
     1   + Making changes to existing file.

Sanjana089 commented 17 seconds ago   Owner 😊 •••

No description provided.

🔼 **Sanjana089** added 2 commits 12 minutes ago

○ 🧑 changes in feature branch   b249cbb

○ 🧑 changes in feature branch   a72caa9

🔀 🧑 **Sanjana089** merged commit **262a117** into Dev now   Revert

🔀 **Pull request successfully merged and closed**   Delete branch
You're all set—the Feature branch can be safely deleted.

8. Check-out the latest code from remote branch to local branch

```
sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (main)
$ git checkout Feature
Switched to branch 'Feature'
```

9. Checkout vs Pull

```
sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (main)
$ git pull
remote: Enumerating objects: 7, done.
remote: Counting objects: 100% (7/7), done.
remote: Compressing objects: 100% (4/4), done.
remote: Total 4 (delta 1), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (4/4), 1.26 KiB | 2.00 KiB/s, done.
From github.com:Sanjana089/Remote
   a72caa9..25cfbc8  main          -> origin/main
   b15f8c3..262a117  Dev           -> origin/Dev
Updating a72caa9..25cfbc8
Fast-forward
 file1.txt | 1 +
 1 file changed, 1 insertion(+)

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (main)
$
```
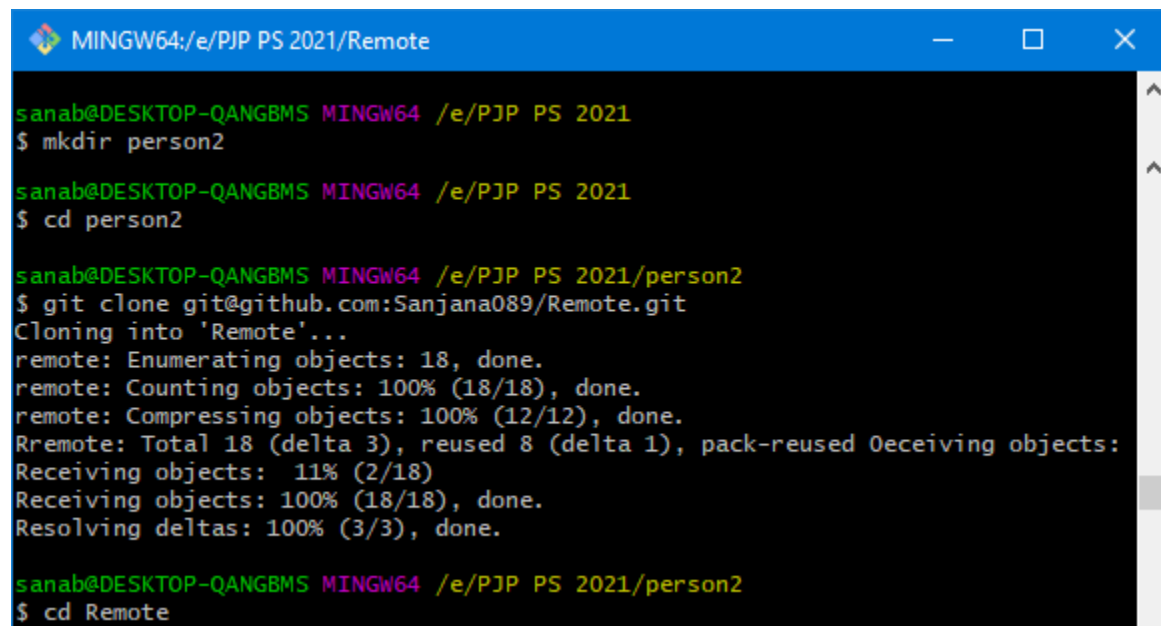
```
sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (main)
$ git checkout Feature
Switched to branch 'Feature'
```

Checkout does not contact remote repositories while pull does.

10.Get two people to make changes to the same file, check-in and handle merge conflicts.

Ans:

When two or more people modify the same file then git is not able to identify which one is correct. This leads to merge conflicts.

```
MINGW64:/e/PJP PS 2021/Remote                              —    □    ×

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021
$ mkdir person2

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021
$ cd person2

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/person2
$ git clone git@github.com:Sanjana089/Remote.git
Cloning into 'Remote'...
remote: Enumerating objects: 18, done.
remote: Counting objects: 100% (18/18), done.
remote: Compressing objects: 100% (12/12), done.
Rremote: Total 18 (delta 3), reused 8 (delta 1), pack-reused 0eceiving objects:
Receiving objects:  11% (2/18)
Receiving objects: 100% (18/18), done.
Resolving deltas: 100% (3/3), done.

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/person2
$ cd Remote
```

```
sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/person2/Remote (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean
sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/person2/Remote (main)
$ git checkout Feature
Switched to a new branch 'Feature'
Branch 'Feature' set up to track remote branch 'Feature' from 'origin'.

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/person2/Remote (Feature)
$ nano file1.txt

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/person2/Remote (Feature)
$ cat file1.txt
Making changes to existing file.

Second change from feature.

changes made by person 2.

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/person2/Remote (Feature)
$ git add file1.txt

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/person2/Remote (Feature)
$ git commit -m "changes from person 2"
[Feature 9abdfe4] changes from person 2
 1 file changed, 2 insertions(+)

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/person2/Remote (Feature)
$ git push
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 4 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 332 bytes | 332.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To github.com:Sanjana089/Remote.git
   edfdd2e..9abdfe4  Feature -> Feature

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/person2/Remote (Feature)
$ cd ..

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/person2
$ cd ..

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021
$ cd Remote
```

```
sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (main)
$ git checkout Feature
Switched to branch 'Feature'

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ nano file1.txt
```

```
sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ cat file1.txt
Making changes to existing file.


changes from person 1.

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ git add file1.txt

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ git commit -m "changes by person1"
[Feature 765ca20] changes by person1
 1 file changed, 3 insertions(+)

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ git push
fatal: The current branch Feature has no upstream branch.
To push the current branch and set the remote as upstream, use

    git push --set-upstream origin Feature


sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (Feature)
$ git push --set-upstream origin Feature
bash: $'\302\203\302\226\302\226git': command not found

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (main|MERGING)
$ git push origin Feature
To github.com:Sanjana089/Remote.git
 ! [rejected]        Feature -> Feature (non-fast-forward)
error: failed to push some refs to 'github.com:Sanjana089/Remote.git'
hint: Updates were rejected because a pushed branch tip is behind its remote
hint: counterpart. Check out this branch and integrate the remote changes
hint: (e.g. 'git pull ...') before pushing again.
hint: See the 'Note about fast-forwards' in 'git push --help' for details.

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (main|MERGING)
$ git pull

sanab@DESKTOP-QANGBMS MINGW64 /e/PJP PS 2021/Remote (main)
$ git push
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 4 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 389 bytes | 389.00 KiB/s, done.
Total 3 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
To github.com:Sanjana089/Remote.git
   2d36786..94cb1cd  main -> main
```

How to resolve merge conflicts:

Git gives a clue to resolve conflicts in its error message. It says Merge conflict in file1, so we know there is a problem with that file. Then it says fix conflicts and then commit the result, so if we follow directions, edit the file, then commit it, everything should work fine.